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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,571	03/31/2004	Gregory S. Clemons	42P18777	6926

7590

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Todd M. Becker  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
Seventh Floor  
12400 Wilshire Boulevard  
Los Angeles, CA 90025

EXAMINER

PARKER, FREDERICK JOHN

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/814,571

Applicant(s)

CLEMONS, GREGORY S.

Examiner

Frederick J. Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8-25-05

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1,5,9,12,15,20,21,24,29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 9,20, 29 are vague and indefinite because the claims require the active “conditioning” step to include “doing nothing” which is not an active step. It is suggested these claims be cancelled and the conditioning step of the independent claims be made “optional”.
- Claims 1,5,12,15,21,24 29 are vague and indefinite because the relative term “microgrooves” fails to convey the intended sizes or dimensions of the grooves, the sizes are not defined by the disclosure, and it appears the sizes/ dimensions are of microgrooves are not standardized and therefore apparent to one skilled in the art.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1,3-9,12,14-20 rejected under 35 U.S.C. 102(b) as being anticipated by Kano et al US 5705096.

Kano teaches forming LCD alignment films which provide advantages over conventional rubbing forming methods. A polymeric compound is applied onto a glass, ceramic, or other base by means including spin coating and printing, which **can** (and therefore optionally) be conditioned by drying via heat to remove solvent. As shown in fig. 5, base 12 having polymer coating 24 thereon is placed on pedestal 46, wherein upper plate 44 bearing mold plate 52 containing a profile of grooves and ridges (shown to be triangular/ a triangular spaced profile) is impressed into the coating to provide a pattern of concavities and convexities (e.g. embossing) therein of regular depth, prior to raising of the plate 44. Col. 8, 8-44.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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7. Claims 2,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al in view of Hirai et al US2006/0050187 (EFD 10-20-03)

Kano et al is cited for the same reasons previously discussed, which are incorporated herein. PI or PVA are not cited as polymer film materials.

However, Hirai teaches that polyimide (PI) or polyvinyl alcohol (PVA or PVOH) are commonly applied as polymer films on bases which are used in LC alignment films, see [0068]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kano et al by substituting the polymer film material of Kano with the PI or PVA film material of Kirai et al because both are established in the art as polymer film materials for the application of forming LC alignment films.

8. Claims 10, 21,23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al in view of Epstein et al US 2003/0035231A.

Kano et al is cited for the same reasons previously discussed, which are incorporated herein. Oscillating the grooving tool is not cited.

Epstein teaches in [0070] that in the tooling of films in LCD's that the tool is rocked/ rotated/ oscillated to achieve minute features in the machined layers. Given the overall teachings of Kano regarding using tool means to apply the profile of grooves and ridges to form an alignment film with a pretilted surface (col. 1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Kano et al and incorporating the teachings of Epstein to rock/ rotate/ oscillate the tool to achieve minute features in the machined

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layers in order to improve the profile of grooves and ridges to form a more accurate alignment film.

9. Claims 11, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al in view of Hirai and Epstein et al US 2003/0035231A.

Kano et al, Hirai, and Epstein are cited for the same reasons previously discussed, which are incorporated herein. In view of the discussions above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Kano et al by substituting film materials as disclosed by Hirai and incorporating the teachings of Epstein to rock/ rotate/ oscillate the tool to achieve minute features in the machined layers in order to improve the profile of grooves and ridges to form a more accurate alignment film of an equivalent film material.

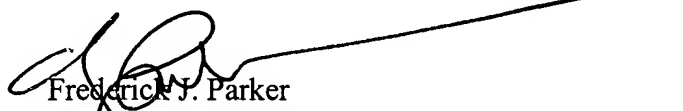
Further, Hirai also teaches in [0078-0080] to embed by embossing hard particles such as alumina, zirconia, etc (which are inherently abrasive, alumina being a conventional constituent of grinding media or papers) for protective as well as anti-glare properties of concavo-convex structures. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Kano et al by substituting film materials and incorporating particles during embossing as disclosed by Hirai and incorporating the teachings of Epstein to produce concavo-convex grooved alignment films with hardened/ protective surfaces to prevent wear on alignment surfaces.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Frederick J. Parker  
Primary Examiner  
Art Unit 1762

fjp